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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,862	05/12/2006	Petrus A Van Nijnatten	1328-26	3794

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EXAMINER	
GUGLIOTTA, NICOLE T	
ART UNIT	PAPER NUMBER
1794	
MAIL DATE	DELIVERY MODE
04/14/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/563,862	VAN NIJNATTEN, PETRUS A	
	Examiner	Art Unit	
	NICOLE T. GUGLIOTTA	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 26, 2009 has been entered.

Examiner's Note

2. Examiner acknowledges the amendment made to claim 1 and that no new matter has been added.

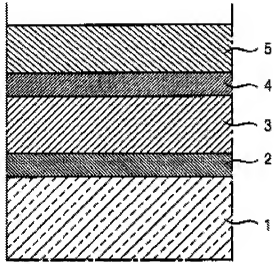
Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1, 3 - 6, 8 – 14, 17 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boire et al. (U.S. Patent No. 5,939,201).**

PRIOR ART (Boire et al.)



5.

6. In regard to claims 1, 6, & 18, Boire et al. disclose a method of depositing a coating comprising a reflective layer, 3, on glass along with complementary layers 2, 4, and 5 for a reflective coating. Such coatings are intended to be used as glazing panels for buildings or motor vehicles, giving these glazing panels a solar protection function (Col. 10, Lines 29 – 36). A metal (reflective) conductive layer, 3, is sandwiched between interlayers (also called "complementary layers") 2 and 4 (metal oxides, which correspond to Applicant's "non-conductive films") (Figure 1, Col. 2, Lines 4 – 20; Col. 6, Lines 33 - 40). Boire et al. disclose a reflective coating. Applicant's claims are drawn to an emission enhancing coating. The reflective coating of Boire et al. contains the same materials and structure as claimed by Applicant. Therefore, Examiner takes the position the coating of Boire et al. must also have emission enhancing properties.

> The internal and external complementary layers generally have geometric thicknesses of between 1 and 200 nm…**the thicknesses of the complementary layers are to be modulated depending on many parameters**, including the very nature of these layers, that of the reflective layer and the type of attack to which the stack of layers will be exposed…if the glass substrate has thereafter to undergo heat treatments of the annealing, bending or tempering type, these layers will fulfill their protection role once again, and in the latter case **it may be advantageous**

to make them thicker than in the case where the substrate does not have to undergo this type of postdeposition treatment (Col. 9, Lines 48 – 65).

7. Absent a showing of criticality with respect to the thickness of the complementary layers (a result effective variable), it would have been obvious to a person of ordinary skill in the art at the time of the invention to adjust the thickness of the complementary layers through routine experimentation in order to optimize protection of the reflecting layer when the laminate undergoes post deposition treatment, such as bending of the substrate and coating for applications such as windows of motor vehicles. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

8. In regard to claims 3 – 5, Boire et al. disclose the thickness of the complementary layers 2 and 4 each may be a large as 200 nm (Col. 9, Line 49) and possibly larger. Additional layer 5 has a thickness of at most 120 nm. The reflective layer 3 has a thickness of 50 nm (Example 1, Col 14). Therefore a laminate comprising 2 conductive layers, an additional layer, and a non-conductive layer would have a total thickness of 570 nm. Boire et al. suggest the possibility of thicker complementary layers, as discussed above. If the thickness of the non-conductive (complementary) layers were to be optimized to as much as 500 nm, the thickness of the total coating would be 1270 nm (1.270 microns).

9. In regard to claims 8 and 9, Boire et al. disclose the conductive layer may be made of aluminum-zinc alloys (corresponds to Applicant's "aluminum-doped zinc oxide") (Col. 2, Lines 6 - 20).

10. In regard to claim 10, Boire et al. disclose the interlayers, which may be an oxide of silicon, are transparent (Col. 7, Line 56 - Col. 8, Line 3).

11. In regard to claims 11 and 12, Boire et al. disclose the interlayers 2 and 4 may be based on oxides such as silicon oxide (Col. 6, Lines 33 - 40).

12. In regard to claim 13, a glass substrate has a low emissivity. The coating of Boire et al., with a thick reflective layer for enabling a true mirror, has a higher emissivity (Col. 1, Lines 10 – 13).

13. In regard to claims 14 and 19, Figure 3 of Boire et al. illustrates the interlayer 2 (i.e. an oxide of silicon) is applied to the surface of an article (a glass substrate) (Col. 6, Lines 35 - 38).

14. In regard to claim 17, the coating is applied to a mirror (Col. 1, Lines 5 – 20; Col. 6, Lines 54 – 55). Mirrors reflect images and light. Therefore, the coating is applied to a light reflector.

15. Claims 1 - 6, 8 – 12 & 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson (U.S. Patent No. 6,125,598), in view of Buhay et al. (US 2004/0106017 A1).

16. In regard to claims 1 & 18, Nelson discloses a glass laminate utilized for vehicle windows (Col. 3, Line 21) comprising alternating layers of silicon dioxide and fluorine doped in tin oxide (Col. 5, Lines 24 - 46). Nelson et al. disclose the silicon dioxide layer to have a thickness of 700 – 1500 Angstroms (70 – 150 nm).

17. Buhay et al. teach a laminate for reducing heat build-up in the interior of a vehicle by providing a laminated windshield having two glass plies with an infrared (IR) or ultraviolet (UV) attenuating solar control coating between the plies (Section [0001]). This solar control coating stack comprises a functional coating (conductive layer) and a protective coating (non-conductive coating) (Section[0010]). Increasing the thickness of the protective layer increases the emissivity value, which improves the heating and cooling characteristics of the plies (Section [0034]). Buhay et al. disclose their protective coating to specifically be in the range of 500 Angstroms to 50,000 Angstoms (50 nm to 5000 nm) (Section [0036]).

18. It would have been obvious to one of ordinary skill in the art at the time of the invention to increase the thickness of the non-conductive layer to a range of 50 – 5,000 nm in order to increase the emissivity, and therefore, decrease the heat build-up in the interior of a vehicle.

19. In regard to claim 2, Buhay et al. disclose the solar energy reflectance of the coating (light radiation emitted by the surface) is electromagnetic energy in the range of 700 nm to 2100 nm (Section [0061]). For claims 3 - 5, discussed below, the total thickness of the coating combination of Nelson and Buhay et al. would be approximately 1150 nm. Therefore the total thickness of the coating, 1150 nm, is less than the light radiation of 2100 nm emitted (reflected) by the surface.

20. In regard to claims 3 – 5, Nelson discloses their conductive layer gave a thickness range of 700 – 1500 Angstroms (70 – 150 nm) (Col. 4, Lines 63 – 67). Buhay et al. disclose a protective coating have a thickness of 50 nm to 5000 nm (Section [0036). Therefore, a laminate structure of 2 non-conductive coatings of 500 nm thickness and one conductive coating of 150 nm thickness would have a total thickness of 1150 nm (1.15 microns).

21. In regard to claim 6, 8, and 9, Nelson disclose an electrically conductive layer of fluorine doped tin oxide (Col. 5, Line 44) and Buhay et al. disclose a functional (conductive) layer of a metallic nitride (Section [0031]) and/or a reflective metal such as gold, copper, or silver, and may further comprise a primer film, such as titanium (Section [0032]).

22. In regard to claim 10, Nelson discloses a thin film stack of transparent thin film coatings (Col. 3, Lines 6 – 8).

23. In regard to claims 11 & 12, Nelson discloses the non-conductive layer is silicon dioxide (Col. 4, Line 23). Buhay et al. also disclose their protective layer (non-conductive) can be silicon oxide (Section [0037]).

24. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson and Buhay et al., as in claim 1, and further in view of Woodward et al. (US 2001/0021540 A1).

25. Nelson and Buhay et al. are silent in regard to the presence of chrome, nickel or rhodium in the conductive layer.

26. Woodward et al. disclose chrome and nickel are traditionally known for reducing glare for solar control coatings applied to windows of vehicles or buildings (Section [0007]). Solar control coatings provide solar screening to the interior of vehicles, homes or buildings (Section [0038]). Woodward et al. also teach chromium and/or nickel also make good primers, which is applied to the conductive layer of titanium nitride to improve adherence between the titanium nitride and the adhesive layer or substrate (Section [0035]).

27. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the limitation of nickel or chrome in the coating taught by the combination of Nelson and Bujay et al. because Woodward et al. suggest the presence

of nickel and/or chrome reduces glare and improves adherence between the conductive layer and the adjacent layer (i.e. substrate or adhesive).

28. Claims 13 & 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson and Buhay et al., as in claim 1, and further in view of Wakelyn (U.S. Patent No. 3,395,053).

29. The combination of Nelson and Buhay et al. teach an emission enhancing coating which prevents heat build-up in the interior of vehicles. Nelson and Buhay et al. are silent in regard to the application of their coating to a metal foil substrate.

30. Wakelyn teaches the application of thermal control coatings with high emission properties to aluminum foil surfaces with low emissivity surfaces. These coatings applied to the aluminum foil exteriors of space vehicles (i.e. satellite structures) control the temperature needed for minimum operations (Col. 2, Lines 1 – 26).

31. It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the emission enhancing coating disclosed by the combination of Nelson and Buhay et al. to the aluminum foil surface of a satellite or other space vehicle in order to regulate the temperature of the vehicle.

32. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson and Buhay et al., as in claim 1, and further in view of Rancourt et al. (U.S. Patent No. 4,735,488).

33. The combination of Nelson and Buhay et al. teach an emission enhancing coating which prevents heat build-up in the interior of vehicles. Nelson and Buhay et al. are silent in regard to the application of their coating to a solar cell substrate.

34. Rancourt et al. disclose the desire for a high emission coating applied to solar cells to overcome overheating problems (Col. 1, Lines 10 – 15).

35. It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the emission coating disclosed by the combination of Nelson and Buhay et al. to solar cells in order to overcome the problems of solar cells which may experience overheating, as disclosed by Rancourt et al.

Response to Arguments

36. Applicant argues neither Biornard nor Kaneko et al. teach using non-conductive films with a thickness of 500 - 1500 nm (Remarks, Page 1).

37. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

38. Applicant argues "none of the cited prior art even mentions that the coating described therein may have an effect on thermal emissivity" (Remarks, Page 1).

39. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., thermal emissivity) are not recited in the rejected claim(s). Although the claims are

interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Further, Applicant's invention as claimed provides the same structure as the prior art. Therefore one would reasonably expect the same properties. Applicants have provided no evidence to suggest the contrary.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE T. GUGLIOTTA whose telephone number is (571)270-1552. The examiner can normally be reached on M - F 8:30 - 6 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1794

NICOLE T. GUGLIOTTA
Examiner
Art Unit 1794